



Drinking Water Audit Report

County:	Cork	Date of Audit:	15/10/18
Plant(s) visited:	Cluin Court Allihies PWS (Scheme Code 0500PUB4411)	Date of issue of Audit Report:	01/11/2018
		File Reference:	DW2014/321
		Auditors:	Ms. Criona Doyle
Audit Criteria:	<ul style="list-style-type: none"> • The <i>European Union (Drinking Water) Regulations 2014 (S.I. 122 of 2014) as amended.</i> • <i>The EPA Handbook on the Implementation of the Regulations for Water Services Authorities for Public Water Supplies (ISBN: 978-1-84095-349-7)</i> • The recommendations specified in the <i>EPA Drinking Water Report.</i> • EPA Drinking Water Advice Notes No.s 1 to 15. • The recommendations in any previous audit reports. 		

MAIN FINDINGS

- i. On the day of the audit the UV and chlorine disinfection systems were operating satisfactorily.
- ii. Irish Water should install a high level chlorine alarm.
- iii. Irish Water should review the 30 minute delay on the low level chlorine alarm to determine if a faster shut down can be implemented to prevent inadequately disinfected water going into the supply.

1. INTRODUCTION

Under the *European Union (Drinking Water) Regulations 2014, as amended*, the Environmental Protection Agency is the supervisory authority in relation to Irish Water and its role in the provision of public water supplies. This audit was carried out to assess the performance of Irish Water in providing clean and wholesome drinking water.

The Cluin Court Allihies Water Treatment Plant (WTP) supplies a housing estate with 16 houses on the edge of the village of Allihies. A borehole source provides 4m³/d. Treatment consist of ion exchange for the removal of iron and manganese followed by UV disinfection and chlorination.

The opening meeting commenced at 12.30pm at the Cluin Court Allihies WTP. The scope and purpose of the audit were outlined at the opening meeting. The audit process consisted of interviews with staff, review of records and observations made during an inspection of the treatment plant. The audits observations and recommendations are listed in Section 2 and 4 of this report. The following were in attendance during the audit.

Representing Irish Water:

Deirdre O'Loughlin, Drinking Water Compliance Specialist.
Kian Guihen, Drinking Water Compliance Analyst.

Representing Cork County Council:

Michael Russell, Acting Senior Executive Engineer
Seamus Sutton, Executive Engineer.
Alan Harrington, Curator
Eoin Harrington, Relief Curator.

Representing the Environmental Protection Agency:

Criona Doyle, Inspector.

2. AUDIT OBSERVATIONS

The audit process is a random sample on a particular day of a facility's operation. Where an observation or recommendation against a particular issue has not been reported, this should not be construed to mean that this issue is fully addressed.

1.	Source Protection <ul style="list-style-type: none">a. The borehole is located in a locked secure fenced compound behind the treatment plant building.b. The wellhead was not examined as part of the unannounced audit as the key to the compound was not available.c. The <i>Cryptosporidium</i> Risk Assessment was not available at the audit. A copy was forwarded following the audit and confirmed a final risk assessment score of 22 (low risk).
2.	Disinfection <ul style="list-style-type: none">a. The water is disinfected using 10-11% low bromate sodium hypochlorite.b. Duty and assist chlorine dosing pumps are in place. The pumps automatically changeover every 12 hours. All chlorination equipment was within the service due date.c. The low level chlorine alarm is set at 0.2mg/l. The generation of the alarm results in the shutdown of the borehole pump. There is a 30 minute delay in response to the alarm. There was no high level chlorine alarm level set on the day of the audit. A cascade alert system is in place in response to the generation of a low level chlorine alarm.d. A sampling kiosk is provided in the adjacent estate and is used for the monitoring of the residual chlorine levels. The plant is visited six times per week and the residual chlorine levels are recorded in the daily plant log.e. Due to the inadequate contact time provided by the 0.5m³ treated water storage tank a UV disinfection system is also provided.f. Two Trojan Pro 10 UV units provide the UV disinfection. The units operate on a duty and standby basis. Manual switch over of the units is required. The unit is validated in accordance with USEPA validation protocols.g. The UV unit is validated for flows up to 2.27m³/hr. The plant log indicates the daily flows are < 5m³/d. The UV alarm level is set at a dose rate of 45mJ/cm². The minimum dose required to achieve disinfection is 40mJ/cm². In the event of the UV unit operating outside of its validated range no water is allowed to pass through the UV reactors thereby shutting down the supply. A cascade alert system is in place for the UV alarms.h. A UV dose of 79mJ/cm² was observed on the day of the audit on the HMI. Trends are available on site and at the Skibbereen Council offices.i. A UVT monitor is in place and a reading of 92.4% was recorded on 15/10/18. There is no

	alarm linked to the UVT monitor. The validation cert indicates a UVT > 75% is required.
3.	Ion Exchange / Filtration <ol style="list-style-type: none"> a. There are two ion exchange units installed for the removal of iron and manganese. The two units operate in parallel.
4.	Management and Control <ol style="list-style-type: none"> b. A detailed up to date plant manual was available. Good record keeping was observed to be taking place on site. c. The data on EDEN only lists chlorination under the treatment type provided. UV disinfection and ion exchange are also provided at the WTP.

3. AUDITORS COMMENTS

The unannounced audit was carried out to examine the disinfection systems. The audit indicated that both the UV and chlorination disinfection systems were satisfactorily operating.

4. RECOMMENDATIONS

Disinfection

1. Irish Water should install a high level chlorine alarm.
2. Irish Water should review the 30 minute delay on the low level chlorine alarm to determine if a shorter response time can be implemented to prevent inadequately disinfected water going into supply.
3. Irish Water should investigate the feasibility of installing a low level UVT alarm and linking the auto shutdown of the supply to the low level UVT alarm.

Management and Control

4. Irish Water should update EDEN records to include ion exchange and UV disinfection under treatment type provided.

FOLLOW-UP ACTIONS REQUIRED BY IRISH WATER

During the audit Irish Water representatives were advised of the audit findings and that action must be taken as a priority by Irish Water to address the issues raised. This report has been reviewed and approved by Ms. Regina Campbell, Drinking Water Team Leader.

Irish Water should submit a report to the Agency within one month of the date of this audit report detailing how it has dealt with the issues of concern identified during this audit. The report should include details on the action taken and planned to address the various recommendations, including timeframe for commencement and completion of any planned work.

The EPA also advises that the findings and recommendations from this audit report should, where relevant, be addressed at all other treatment plants operated and managed by Irish Water.

Please quote the File Reference Number in any future correspondence in relation to this Report.

Report prepared by:

Críona Doyle

Date:

01/11/18

Inspector

